

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/012164 A1

(51) International Patent Classification⁷: **C01B 3/00**

(21) International Application Number:
PCT/GB2004/003301

(22) International Filing Date: 30 July 2004 (30.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0317894.4 31 July 2003 (31.07.2003) GB

(71) Applicant (for all designated States except US): **JOHNSON MATTHEY PUBLIC LIMITED COMPANY** [GB/GB]; 2-4 Cockspur Street, Trafalgar Square, London SW1Y 5BQ (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BOYD, David, Alan** [GB/GB]; Woodside, 1 Wood Lane, Sonning Common, Reading RG4 9SJ (GB). **OGRODNIK, Virginie** [FR/GB]; 8 Dumbarton Way, Caversham Park Village, Reading RG4 6QT (GB). **PRATT, Allin, Sidney** [GB/GB]; 6 The Limes, Crowmarsh Gifford, Wallingford OX10 8HF (GB).

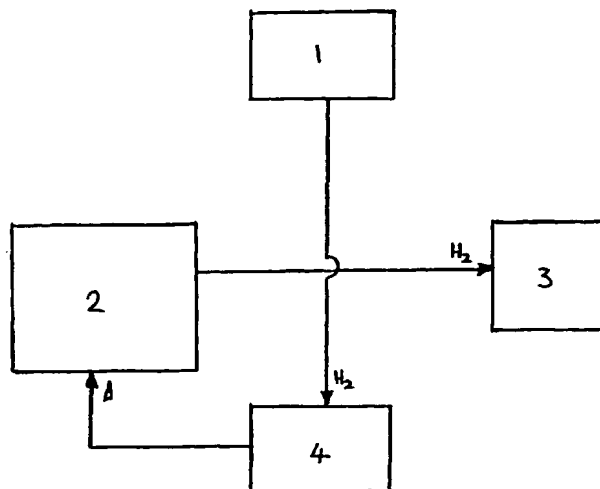
(74) Agent: **NUNN, Andrew, Dominic**; Johnson Matthey Technology Centre, Blounts Court, Sonning Common, Reading RG4 9NH (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: **HYDROGEN SUPPLY SYSTEM**



(57) Abstract: A hydrogen supply system (Figure 1) comprises a first hydrogen storage material (1), which may be an AB₅ type material, and a second hydrogen storage material (2) which may be a MgH₂ type material; wherein the two hydrogen stores are separate. The first hydrogen storage material can be activated to release hydrogen at a lower temperature than can the second hydrogen storage material and at least a proportion of the hydrogen released from the first hydrogen storage material is utilised to activate the second hydrogen storage material. Hydrogen released from the second hydrogen storage material is made available to a hydrogen consumption system (3). The system is particularly suited for use as a mobile hydrogen supply, for example to provide hydrogen to a fuel cell powered vehicle.

WO 2005/012164 A1

WO 2005/012164 A1



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.